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# The Impact of ICD-10 Implementation on Hospital Providers

Gwendolyn Johnson

*University of Tennessee Health Science Center*

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The Impact of ICD-10 Implementation on Hospital Providers

Gwendolyn Johnson

University of Tennessee Health Science Center

Department of Health Informatics and Information Management

Masters of Health Informatics and Information Management

Advisor: Professor Sajeesh Kumar

2014

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## ABSTRACT

The transition from ICD-9CM to ICD-10 CM for hospital providers was reviewed to identify the impact. The study will incorporate history of the change, lessons from other country adoptions, and a comparison of static industry survey results with more dynamic results from the 2014 Johnson survey for this study. Remediation and critical success factors will also be outlined. Results include financial impact and concerns from the literature review as well as participant survey feedback from payors, healthcare consultants, and hospital employees in health information management, financial analysis, patient financial services and information technology. For the 2014 Johnson study, twenty-one surveys were submitted; 17 hospitals (two multi-hospital systems; one with two hospital and the other a forty hospital system, both systems were counted as two hospitals), three payors, two consultants; eleven total respondents; overall survey completion rate was 50%. Impact per respondent facility ranged from zero dollars to \$19.1 million. Impact by two consulting firms, Nachimsom Advisors and KPMG were confirmed with the eleven respondents study. The complexities associated with obtaining impact dollars surrounding payor readiness, clinical documentation, ICD-10 code assignment and computer system readiness attributed to the disparity. Training physicians was their greatest challenge in tandem with clinical documentation as their greatest financial impact of \$36.6 million or \$6.1 million per facility, confirming industry estimates. Total impact for all categories was \$17 million, compared to Nachimsom and KPMG respectively, at \$8 million and \$15 million. Key success factors; an implementation plan that includes payor testing, coder and physician education, clinical documentation improvements, end-to-end testing, denials management and a contingency plan, will mitigate the financial impact.

## TABLE OF CONTENTS

Acknowledgements.....	2
Abstract.....	3
List of Figures .....	6
List of Tables .....	7
Chapters .....	8
I.	8
Definition of Terms	
Introduction	
Background Problem	
Purpose and Significance of Study	
Research Questions	
Limitations	
II.	16
Review of Literature	
III.	20
Methodology	
Research Design	
Population and Sample Design	
Data Collection Procedures	
Data Collection Instrument	
IV.	23
Results	
Response Rate of Population	
Representativeness of Sample	
V	34
Analysis and Discussion	

	Limitations and Discussion	34
VI.	Conclusion and Recommendations	42
	Conclusion	42
	Recommendations	44
	List of Reference	45
	Appendices	51

## **List of Figures**

Figure1: 2014 Johnson Survey Overall Participation

Figure 2: 2014 Johnson Survey Hospital Respondents Only

Figure 3: 2014 Johnson Survey Hospitals Number 1 Challenge

Figure 4: 2014 Johnson Survey Greatest Impact to Cash Flow

Figure 5: 2014 Johnson Survey Knox Community Hospital Financial Impact

Figure 6: 2014 Johnson Survey Baptist Hospital Financial Impact

Figure 7: 2014 Johnson Survey Average Financial Impact - All Hospitals

Figure 8: 2014 Johnson Survey Coder Training

Figure 9: 2014 Johnson Survey Dual Coding

Figure 10: 2014 Johnson Survey Physician Training

Figure 11: 2014 Johnson Survey Training Competency

Figure 12: 2014 Johnson Survey End-to-End Testing Hospital

Figure 13: 2014 Johnson Survey End-to-End Testing Payor

**List of Tables**

Table 1: 2014 Johnson Survey Challenges Ranked by Order of Impact

Table 2: Nachimson Study



## The Impact of ICD-10 Implementation on Hospital Providers

### **Definition of Key Terms**

**AHIMA** – American Health Information Management Association is the national non-profit organization of approximately 50,000 health information management professionals.

**AMA** – American Medical Association is the national non-profit association of over 300,000 physicians and medical students in the United States.

Contingency Plan - the plan to assist providers in identifying and preparing for unexpected ICD-10 conversion events.

**Covered Entity** – as defined by the Federal Register, a health plan, a health care clearinghouse or a health care provider who transmits any healthcare information in an electronic form in connection with a transaction covered

**Dual Coding** – is the ability to code in two environments; ICD-9 and ICD-10 and perform comparative analysis

**End-to-end testing** – the ability to submit an electronic claim (837), obtain an acknowledgement of receipt (277), receive the remittance advice (835) and/or disposition codes if not paid.

**ICD** – The International Classification of Diseases is the standard diagnostic tool for epidemiology, health management and clinical purposes. It is used to monitor the incidence and prevalence of diseases and other health problems.

**Non Covered Entities** – property and casualty insurance health plans, workers compensation plans, and disability insurance plans that submit non-covered transactions such as paper claims, quality reporting and patient assessment data sets; all are non HIPAA covered entities.

**Remediation** – The ability to correct and/or mitigate issues associated with the ICD-10 conversion, synonymous with contingency plan.

**WEDI** – The Workgroup for Electronic Data Interchange is the leading authority on the use of Health IT to improve healthcare information exchange in order to enhance the quality of care, improve efficiency and to reduce costs of the American healthcare system.

## **Chapter 1 – Introduction**

On Thursday, October 1, 2015, all hospitals will begin using ICD-10 CM for diagnosis coding instead of ICD-9 CM for diagnosis coding. ICD-10 is the abbreviation for the International Classification of Diseases Tenth Revision, Clinical Modification (ICD-10-CM), used for reporting diagnosis codes and International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) for reporting procedure codes. The ICD-10 abbreviation is commonly referred throughout the health care industry in the United States (U.S.) and abroad (AMA 2014). This conversion is significant and a major impact on hospital providers, physicians and payors. Merriam-Webster defines impact as a strong or bad effect on something or someone, a forceful contact or onset, the force or impression of one thing on another, a significant or major effect (2014). Many in healthcare have compared the fears of this impact to that of the year 2000 bug (Y2K). A more accurate comparison would be to the transition from HIPAA 4010 electronic transactions standards to the 5010 format for electronic claims and claim related transactions as noted by Dr. Susan Turney in her letter to Secretary of State Kathleen Sebelius. She stated that more 5010 testing and sharing of the results could have averted many of the problems practices, clearinghouse, health plans and software vendors experience prior to and immediately after their “go live” dates (MGMA 2013).

Donna Bragg, Director of Patient Business Services for Providence Hospital in Mobile, AL spoke of her vivid experience with the 5010 conversion. She stated, “We were ready, our claims vendor was ready but our payors were not, though they stated they were. Claims rejected and payor system errors took weeks to correct, our cash was delayed.”

(Personal Interview, July 3, 2014). Identification of the financial impact of ICD-10 is a critical factor in not repeating the setbacks experienced from the 5010 conversion.

## **Background**

Review of ICD history illustrates relevance and benefits. ICD-9 has been in use since January 1979 and after thirty plus years, usage is now outdated and obsolete as stated in a testimony by Dan Rode, Vice President of Policy and Government Relations, to the Department Health and Human Services (HHS) Technology Task Force, "ICD-9 is unable to accommodate the advances in medicine and medical technology such as laser and laparoscopic surgeries that were not performed at the time ICD-9 was implemented" (2004). The actual length of the codes and categories of systems are inadequate. An expanded code structure is needed to accommodate new diseases and procedures (AHIMA, 2014). ICD-10 was officially endorsed by the World Health Organization (WHO) in 1990. The WHO is the directing and coordinating authority for health systems within the United Nations. The WHO has numerous responsibilities; one of their major responsibilities related to this discussion is setting norms and standards (WHO, 2014). In 1995 the U. S. announced adoption of ICD-10 to align with the WHO and other countries. A notice of the proposed rulemaking was published in the Federal Register in August of 2008 with an October 1, 2011 implementation date (HIPAA Administrative Simplification, 2009). There have been three date changes since the proposed dates; October 1, 2013, October 1, 2014 and the latest delay to October 1, 2015.

ICD-10 will become the new standard in coding, where the number of codes will increase from 17,000 codes to over 140,000 codes. The American Medical Association (AMA) states, this move towards more specificity will require coders to have stronger

clinical knowledge with major emphasis on anatomy and physiology. AMA Executive Vice President, Dr. James Madara wrote in a seven page letter to Secretary Kathleen Sebelius with the Department of HHS, strongly urging CMS to reconsider the ICD-10 mandate, based on cost to physicians, that the change would take focus away from improving care delivery and would also take resources away from implementing delivery reforms and health information technology. "The transition to ICD-10 represents one of the largest technical, operational and business implementations in the health care industry in the past several decades" (2014), a copy of the first page of the letter can be found in Appendix A.

Lurking in the horizon is ICD-11, poised to be electronic health record ready (EHR), released in languages other than English and a Web platform that is interactive. It was originally slated for 2015, the WHO recently announced a new deployment date of 2017 (WHO, 2014). Given the ICD-10 delay, the 2017 delay is a breath of fresh air for providers and the like. Half of the providers in the 2014 Johnson survey were not aware of ICD-11.

### **Purpose and Significance**

The purpose of this research study is to show the impact the ICD-10 conversion will have on hospital providers including financial and non-financial. The 2014 Johnson survey results from this study will be revealed along with comparative industry studies and literary results. Lessons learned from early adopters and best practices from The Centers for Medicare and Medicaid Services (CMS), health care professional associations and health care industry leaders will be detailed to facilitate a successful transition for hospital providers.

The research will show that there is a direct correlation between preparation and a successful transition to include; developing an ICD-10 team, establishing a project plan

with tasks, deadlines and responsible parties, the provision of training and assessing competency; especially for coders and physicians, performing dual coding to enhance coding education, test of all downstream systems, end-to-end payor testing with as many payors as allowed, hiring and development of a coding pool; permanent, temporary and outsourced to resolve any coding and accounts receivable backlogs (AHIMA, 2013).

Financial data or the lack thereof associated with impact is a major limiting factor. Providers know and understand the impact however; limited resources prevent the ability to assess financial impact. There is a plethora of information from industry experts; HFMA, AHIMA, AMA, consultants, vendors, accounting firms; KPMG, third party payors; Cigna, Aetna, State Blue Cross and Blue Shield plans and many others. Providers are inundated with information on the subject. This alone, points to the magnitude of impact. The greatest impact is found in the economics - the bottom line. The conversion from ICD-9 to ICD-10 will impact across internal and external boundaries; hospital administrative and clinical staffs, information technology systems from scheduling, registration, charge entry, medical record coding, data capture and reporting, payor contracting, marketing, risk management, clearinghouses, vendors and lastly, physicians and patients. Appendix B shows health information technology solutions provider, Integrus Solutions' depiction of risk modeling in a cross-functional representation between the provider, the patient, CMS, multiple insurance payors, and the claims vendor (2014). This illustration does not include a critically impactful stakeholder, the physician.

The physician impact can be realized using the 2012 physician census performed by The Federation of State Medical Boards (FSMB). Young notes there were 878,194 licensed physicians in the U.S. His article focused on the anticipated influx of 32 million Americans

with new insurance coverage by 2019 due to The Patient Protection and Affordable Care Act. That number was compared to the aging practicing physicians and estimated shortage (2013). The ICD-10 relevance of this census data has two variables; the number of physicians that will require ICD-10 training and the increased number of medical records that will require diagnosis coding. A 2010 study conducted by the Agency for Healthcare Research and Quality (AHRQ) showed an even split between primary care and subspecialty; 51.3 % primary care and 48.7% specialty (2011). This shows that physician impact regarding ICD-10 documentation will basically affect all areas equally; specific impact can be assessed utilizing volumes per specialty, with DRG shifts, high volume and high dollar accounts as recommended by Alvai with Jvion (2013). Establishing a detailed training plan in partnership with this one factor – the physician is critical for the success of any one hospital in the U.S.

### **Research Questions**

This study will show the soft and hard impact of the transition from ICD-9 to ICD-10 for the hospital provider. Impact is anticipated because this is the largest change in healthcare reimbursement since implementation of Diagnosis Related Group (DRG) in the 1980s. President James Madara of the AMA, stated in his position letter to HHS secretary Kathleen Sebelius, “the transition to ICD-10 represents one of the largest technical, operational, and business implementations in the health care industry in the past several decades” (2014). The specific research questions related to the ICD-10 conversion are:

- What factor or factors pose the greatest impact to the hospital provider?
- What will have the greatest impact to cash flow?
- What are the critical success factors to mitigate the impact?

These questions will be answered via review of the literature, the 2014 Johnson survey results from this study and industry surveys.

### **Limitations**

Three noted limitations were identified for the 2014 Johnson survey. They include failure to obtain a high response to the study survey questionnaire, concrete hospital specific financial impact identified from survey respondents as well as the literature review and the transition to ICD-10 does not apply to non-covered entities. Though the data supports the results obtained from this study, an increased number of provider participants would lend to a more reliable study. This study should be repeated with a more supportive population. Since financial impact is not easily attained, obtaining and providing a user friendly tool to assist with capture of financial data to ensure the information is obtained and to ensure the dollars associated with impact are calculated consistently. The subsequent study should include obtaining feedback from non-covered entities for balanced data capture. Non-covered entity information was only obtained from the literature.

A follow-up study should be conducted with a greater survey population and include a consistent methodology to report the financial impact. Lastly, the study should also include non-covered entities for qualitative data.



## **Chapter 2 – Literature Review**

This chapter will identify the Meta analysis of the literature reviewed, articles selected, and inclusion and exclusion variables. The search was conducted using several electronic databases; Pub Med, Mesh, the National Library of Medicine (NLM), electronic and hard copy journal articles, the internet and on line libraries of government and professional associations. The articles ranged in dates from the year 2004 to 2014 for U.S. based information. There were only two articles from 2004; all others were from 2009 to 2014. The 2004 articles provided key information regarding lessons learned from early adopters and the other was a report prepared for the Department of HHS that provided costs from interviews with providers, industry experts, association representatives, payors, software and service vendors and government officials. Articles identified included information specific to the search terms; delay, ICD-9, ICD-10, ICD-11, October 1, 2014, October 1, 2015, 5010, ICD-10 conversion, ICD-9 conversion, end to end testing, coder and physician education, ICD-10 contingency plan, remediation, the WHO, clinical documentation, CDI, and CMS mandate. Rudman, Hart-Hester and Brown noted that using this type of broad inclusion criteria would yield a large number of study information, as apparent with the fifty four articles found (2009).

All articles had relational significant variables with numerous exact matches; ICD-10, delay, testing, coder and physician education, contingency plan, etcetera. The articles were logged via an excel spreadsheet to allow easy comparison, sorting, elimination, and analysis. Variables were the primary sort, followed by a count of the variables then a review of the duplicates to eliminate redundancy. The historical referenced showed the incremental significance of the ICD-10 transition from the WHO, other countries and the lag by the U.S. There was significant qualitative data discussing the impact but many lacked quantitative

supportive data. This factor was also validated with the 2014 Johnson survey conducted for this study. Forty-two sources were selected.

## **Research**

There are three very significant position letters and one position paper; six relevant studies; coder productivity and quality by the University of Cincinnati (UC) and the School of Biomedical Informatics at the University of Texas Health Science Center at Houston (UT-SBHI), The Nachimson Survey, KPMG, HFMA, WEDI and the impact study conducted for this research. See Appendices C, D, and E for the sample 2014 Johnson survey for this research from hospitals, consultants and insurance payors. This study generated an overall response rate of 50%. Specific response rates were 37%, 100% and 100% respectively. As previously noted, hospital provider response rate was less than ideal. This study was approved as exempt review by the Institutional Review Board of UT in accordance with the 45CFR 46.101(b) (2), involving research using survey and interview procedures. In addition, a cover statement was approved for use in lieu of an informed consent interview, also found in Appendix G.

There were four pivotal ICD-10 positions from Medical Group Management Association MGMA, the AMA and two from AHIMA. Two were in support of ICD-10 implementation and two were not in favor of the implementation. AHIMA's supporting positions will be discussed first, beginning with the testimony of Sue Bowman, senior director of coding policy and compliance. The 2013 testimony was made to the National Committee on Vital and Health Statistics Standards Committee purposed to identify the utilization of ICD-10 for reasons other than reimbursement; as a broad perspective tool. The perspectives identified, include comparable international mortality and morbidity data, individual and aggregate analytics, the expansion of quality reporting from individuals to treatment modalities and best practices for

public health, research and consumerism. She also stated that the detail and specificity should reduce the number of audits as well as the potential for fraud and abuse (2013). AHIMA's second position looked at ICD-10 impact inclusive of non-covered entities by discussing the importance of accessing the reporting needs of all external stakeholders, advocating that non covered entities adopt the same compliance date and other regulatory requirement as covered entities. They felt that if all entities were consistently reporting the specificity, there would be data consistency and reporting comparability. More importantly, they noted that ICD-9 codes would not be maintained after the conversion and would become obsolete, therefore compromising the integrity of reported data. An added benefit to non-entity compliance is the expanded injury codes used by automobile and workers compensation plans. She stated the new detail might decrease the need to request additional information, medical records and correspondence. The paper was also a resource to assist facilities in contacting their state workers compensation carries regarding their ICD-10 adoption (2014). The two in opposition; the MGMA and the AMA, sided similar positions to the HHS. The MGMA wrote a very "matter of fact" letter to Secretary Sebelius, see Appendix A for page one of the seven page letter where President and CEO, Susan Turney to immediately reverse the policy and expedite Medicare ICD-10 end-to-end testing. Stating that end-to-end testing would decrease the potential of a catastrophic back-log of claims and impede cash flow (2014). That letter was written in the summer of 2013 and in February 2014, CMS announced end-to-end testing with select clearinghouses and providers.

Page one of the AMA letter from president James Madara's can be found in Appendix H. His number one argument was that adoption will not improve care delivery and could impede development and transition to new delivery methods. They recognized the value of ICD-10 but

thought timing was in direct conflict with other regulatory requirements; electronic health record adoption and Meaningful Use. Their major concerns surrounded increased cost over prior estimates noted in table 6 in the Nachimsom study. To mitigate this cost, Mr. Madara requested HHS to address the end-to end testing limitations without delay and direct the Medicare Administrative Contractors (MAC) and state Medicaid agencies to conduct ICD-10 end-to-end testing. Their other recommendations to CMS included, public dissemination of the test results, expediting the release of Local Coverage Determinations and all other edits for ICD-10, publically disseminate the levels of the MACs and the state Medicaid agencies on a monthly bases, partner with commercial plans to assess their readiness regarding Medicare secondary and cross over claims. Overall, they wanted the department of HHS to understand that failure to test would result in operational problems similar to what the Department experience with the rollout of healthcare.gov ultimately testing was the only method to predict and respond to edits and fully understand the ICD-10 impact on reimbursement. They painted a very vivid picture, and placed the burden of proof with the Secretary Sebelius (2014).

The internationally known audit and accounting firm KPMG, conducted a readiness survey in, 2013 with 39 respondents which revealing their biggest challenge to ICD-10 readiness was staff training, physician buy-in and payor readiness (2014).

WEDI, another well respected organization has been conducting ICD-10 readiness surveys since 2009; their recent survey conducted in August 2014 showed that the entire health care industry had not shown a lot of progress. Only 50% of the payors stated they had begun external claims acceptance testing with providers. Providers reported almost the converse, only 35% of providers stated they had begun external claims testing. Since only 25% of the claims vendors and computer software companies stated their products would not be ready until 2015,

explains why only 35% of the providers had begun testing. They are unable to submit test claims if their systems are not ICD-10 ready (2014).

### **Chapter 3 – Study Methodology**

For this research thesis, three designs were utilized; historical, descriptive and correlational. The 2014 Johnson surveys were submitted to three different populations; hospitals, payors and healthcare consultants. Thirty surveys were submitted via email to twenty-one different hospitals, multiple surveys were submitted to three of the twenty-one hospitals. The provider survey population consisted of the list serve for a hospital information system community in patient financial accounting for twenty-one hospitals. The response rate was disappointingly low as much consideration was given to delivery methodology. This population communicated via email and conducts bi monthly conference calls discussing system functionality and related operational issues; individual requests and solicitations, such as this project are not permitted as conference call agenda items. The population has never met personally, only virtual communication; therefore web delivery was the preferred method. Other methods utilized to facilitate survey completion included two “friendly reminder” emails, and two telephone calls if a telephone number was available or a job title was listed in their email signature. Response rate still did not improve, which could lead to data generalization, however, in the case of this study, the research supports respondent results.

In addition to submission to hospitals, the 2014 Johnson surveys were submitted to three payors and two consultants with current professional relationships with the provider of the surveyor. These surveys were also submitted via email and only one required a reminder, completion rate was 100% for both.

Prior studies and related research reviewed provided relational significance as outlined in the background and significance. The literature includes manuscripts, several surveys and survey analysis, a sample survey, numerous technical reports, industry and professional

association position papers, and position letters to the Department of HHS from three very powerful national organizations in healthcare; AHIMA, MGMA and the AMA

Correlations between articles were drawn utilizing associated variables. There was correlation between the variables within the 42 articles which will be further described in the results chapter.

## Chapter 4 - Results

### Impact

Twenty-one surveys were submitted; sixteen to hospitals, three to payors and two to health care consultants. There were two multi-hospital systems; one with three hospitals and the other with forty, both systems were counted as two single hospitals since the data was supplied by one person. Overall survey completion rate was 50 %. Payor and consultant response was at 100 %. Completion rates and specific question results are illustrated in Figures 1 through 13. While Figure 1 shows 27% of the respondents as hospitals, Figure 2 shows that number, 37% of the hospitals surveyed completed the survey.

Figure 1

2014 Johnson Survey Overall Participation

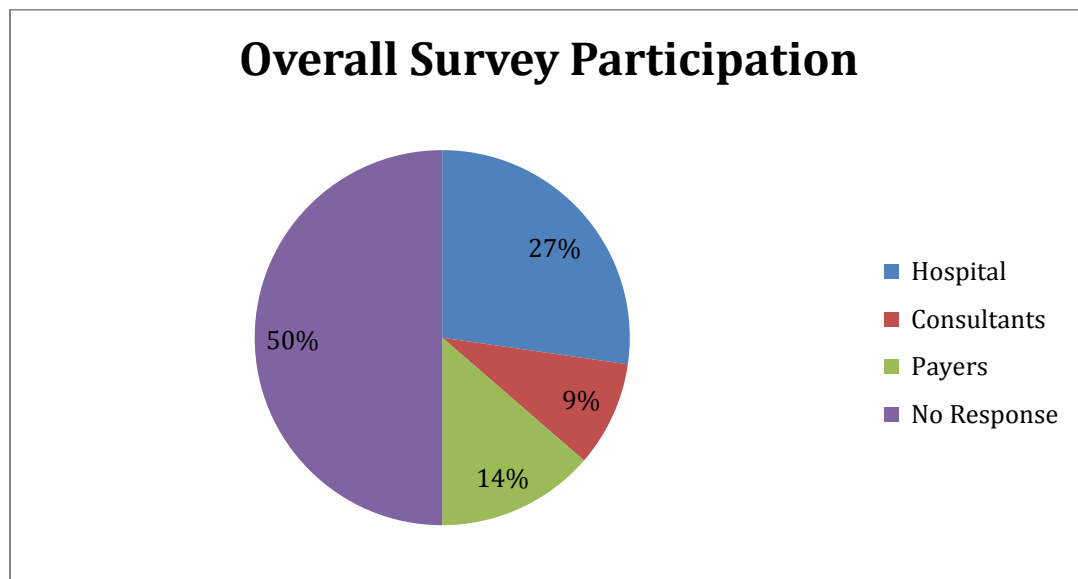




Figure 2

2014 Johnson Survey Hospital Respondents Only

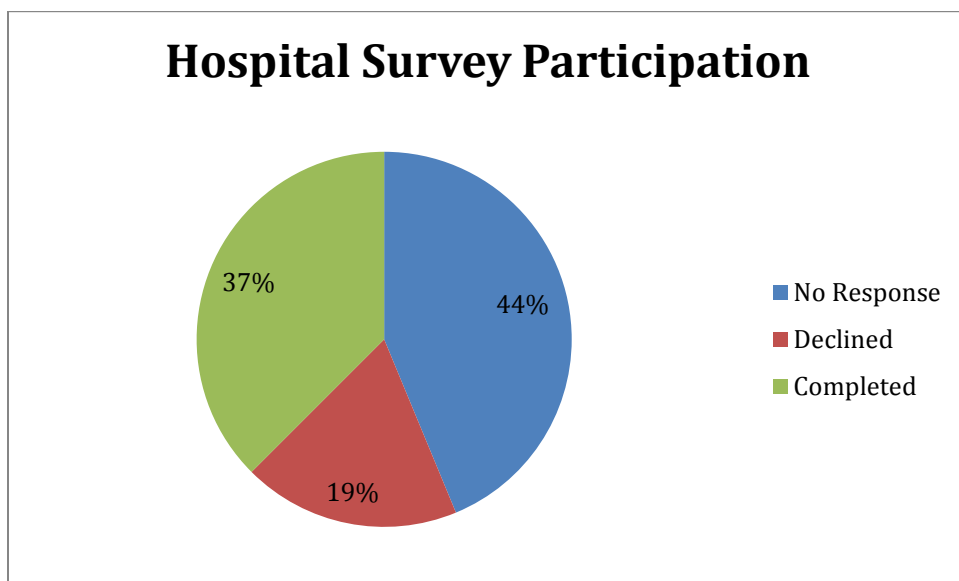


Figure 3

2014 Johnson Survey Hospitals Number 1 Challenge

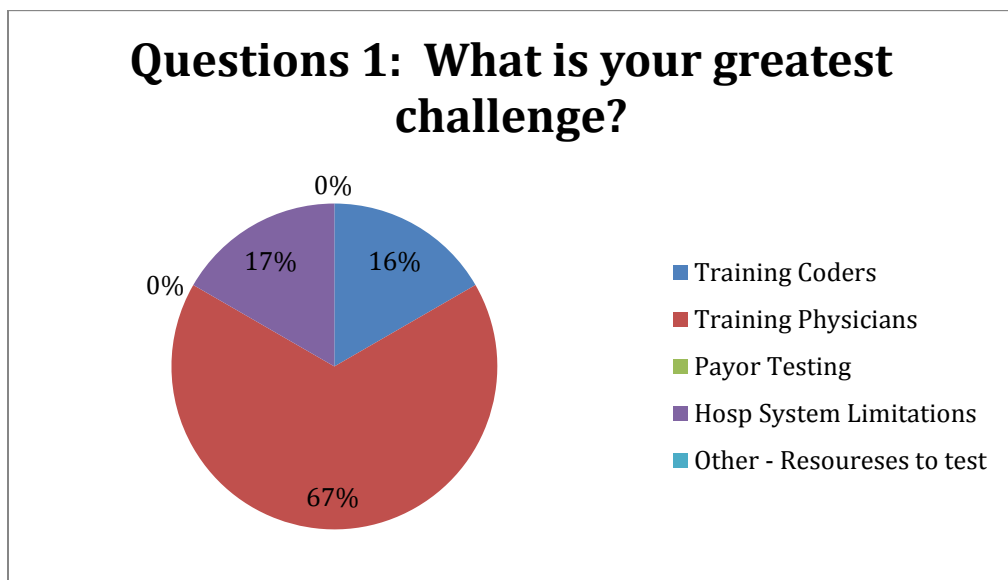


Figure 3 shows the area of greatest concern identified from the six hospitals surveyed was training physicians. Physician training was followed by coder training, payor testing and hospital system readiness, also shown in Figure 3.

Table 1

2014 Johnson Survey Challenges Ranked by Order of Impact

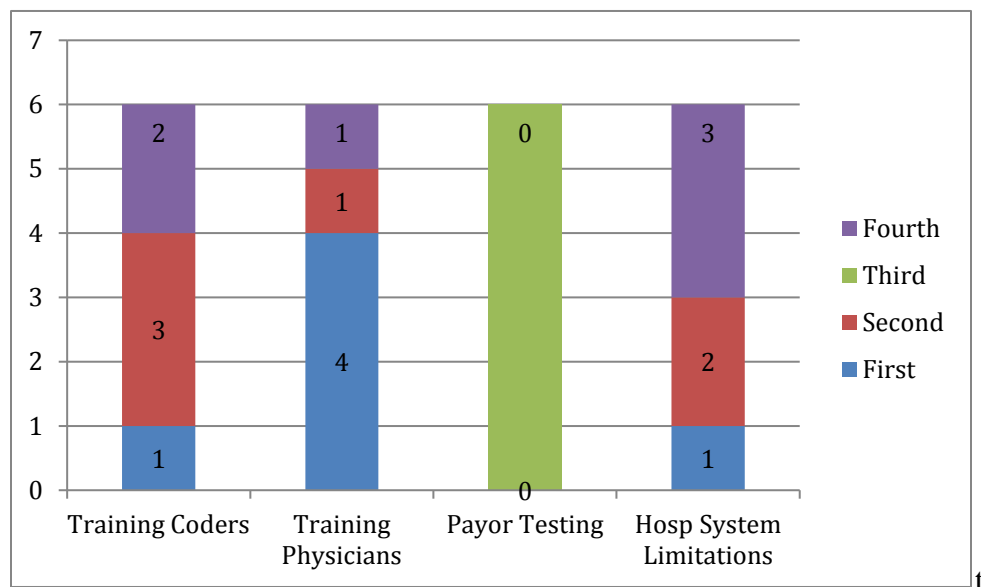


Table 1 ranks their greatest challenges; with training physicians as number one and 100% of the respondents ranked payor testing as their third biggest challenge. Figure 4 illustrates the areas that would most impact cash where 50 % of the respondents ranked clinical documentation as having the greatest impact to cash flow. All other areas that impact cash flow almost ranked equally; ICD-10 code assignment, payor readiness, and hospital system readiness.

Figure 4

2014 Johnson Survey Greatest Impact to Cash Flow

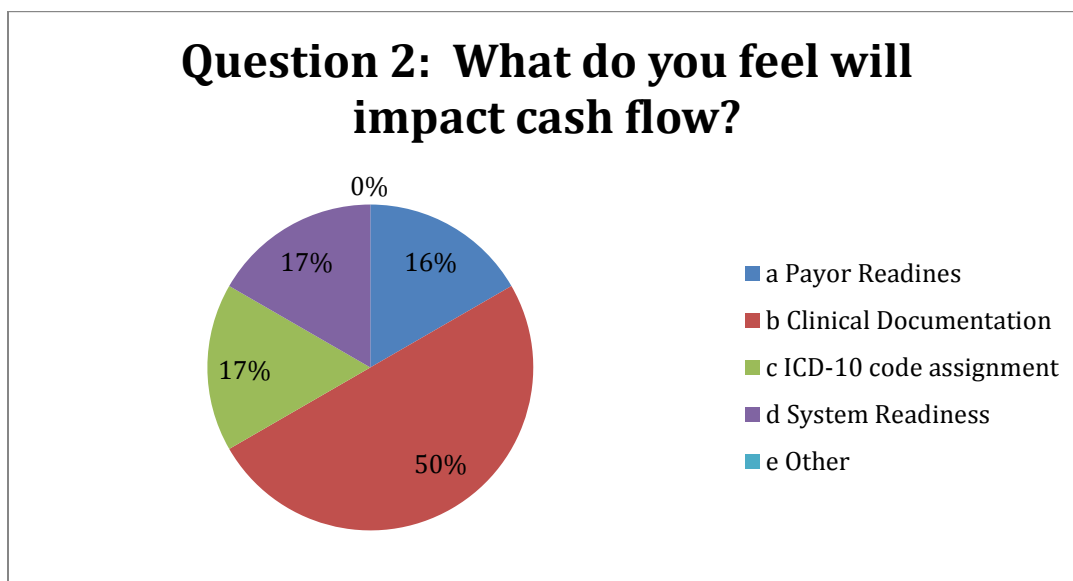
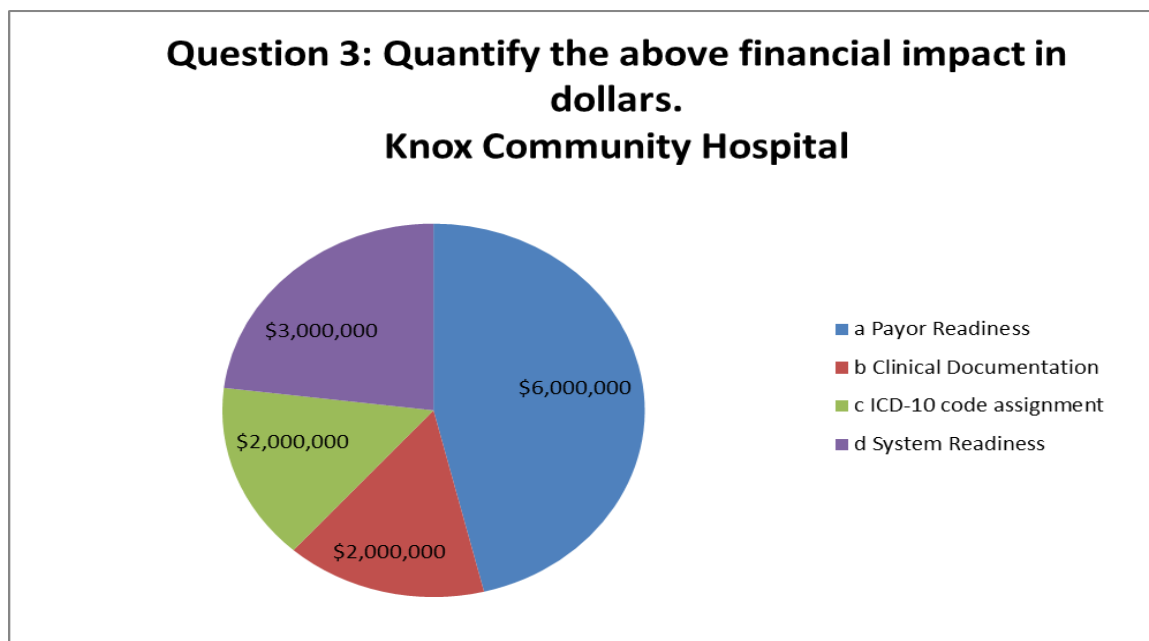


Figure 5

2014 Johnson Survey Knox Community Hospital Financial Impact



Financial impact for every category was provided by only two facilities, see Figures 5 and 6. One facility provided impact for clinical documentation only. Figure 7 provides reported financial impact for all respondents.

Figure 6

2014 Johnson Survey Baptist Hospital Financial Impact – 2014 Johnson Survey

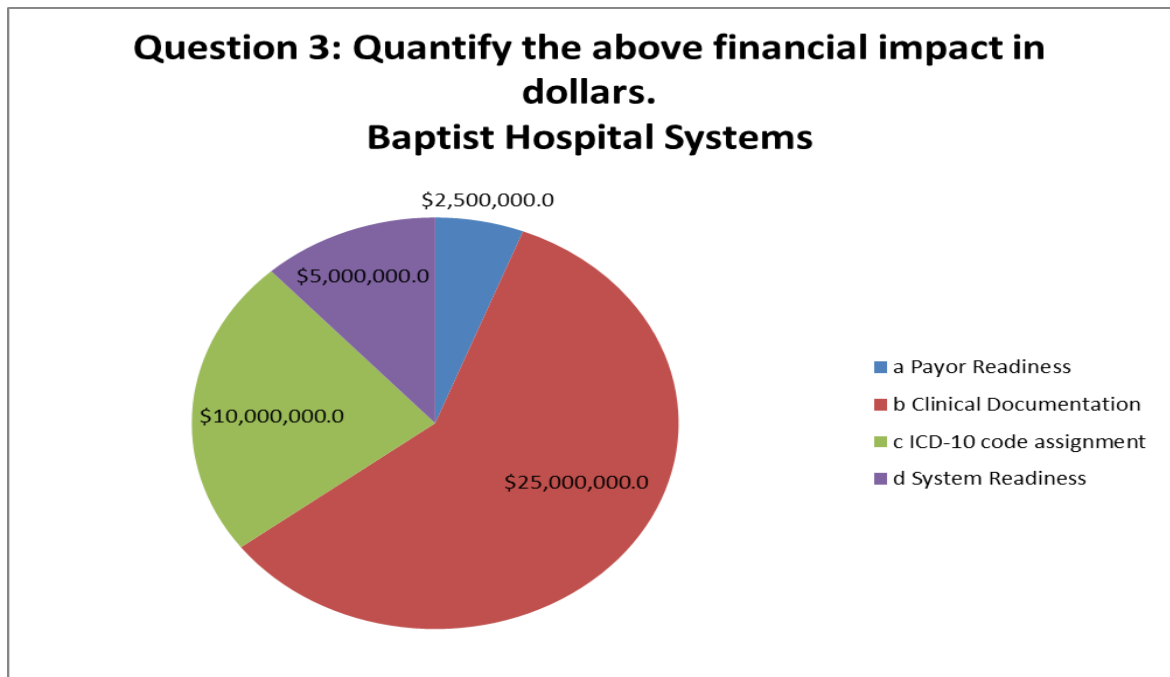
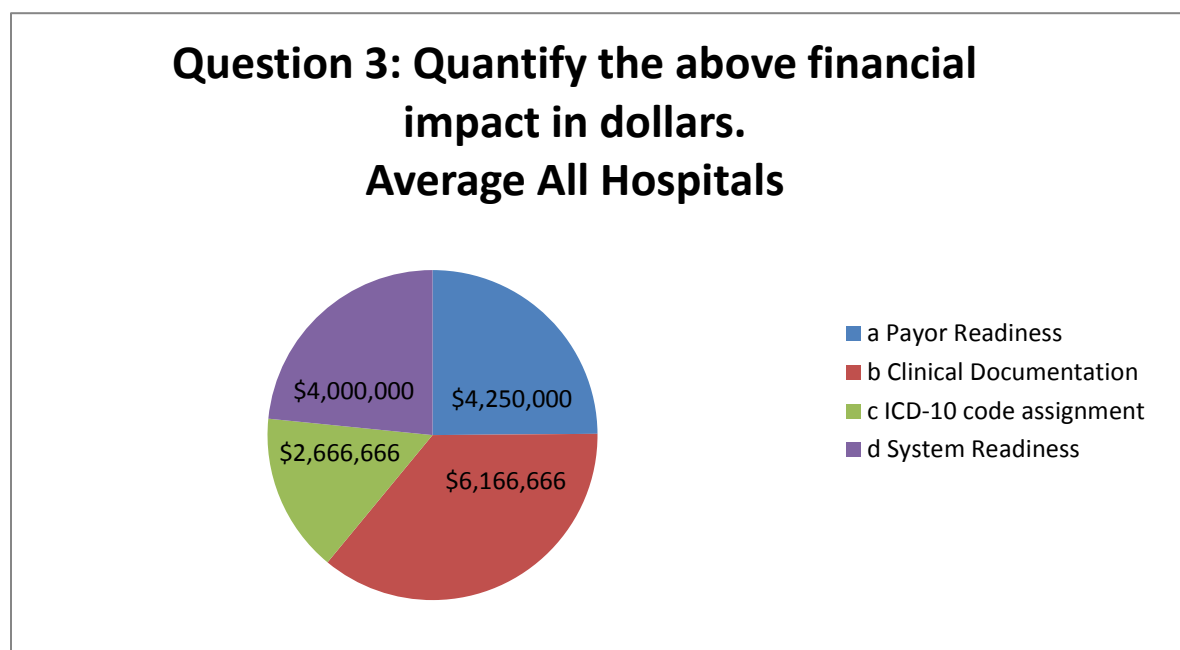


Figure 7

2014 Johnson Survey Financial Impact – Average All Hospitals



Figures 8 through 12 show the results of the 2014 Johnson survey related to ICD-10 training, for coders and physicians and payor testing.

Figure 8

2014 Johnson Survey – Coder Training

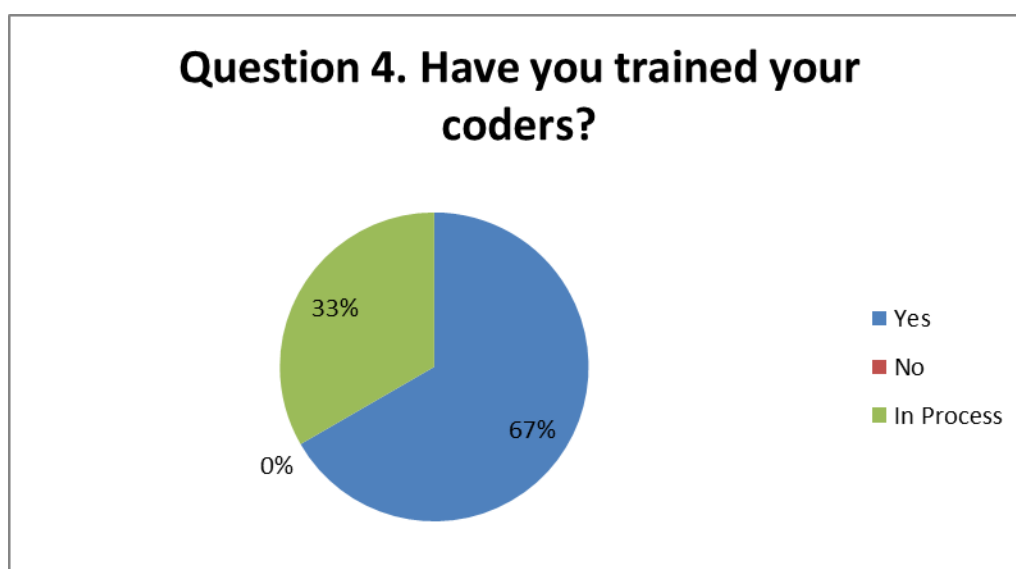


Figure 9

2014 Johnson Survey – Dual Coding

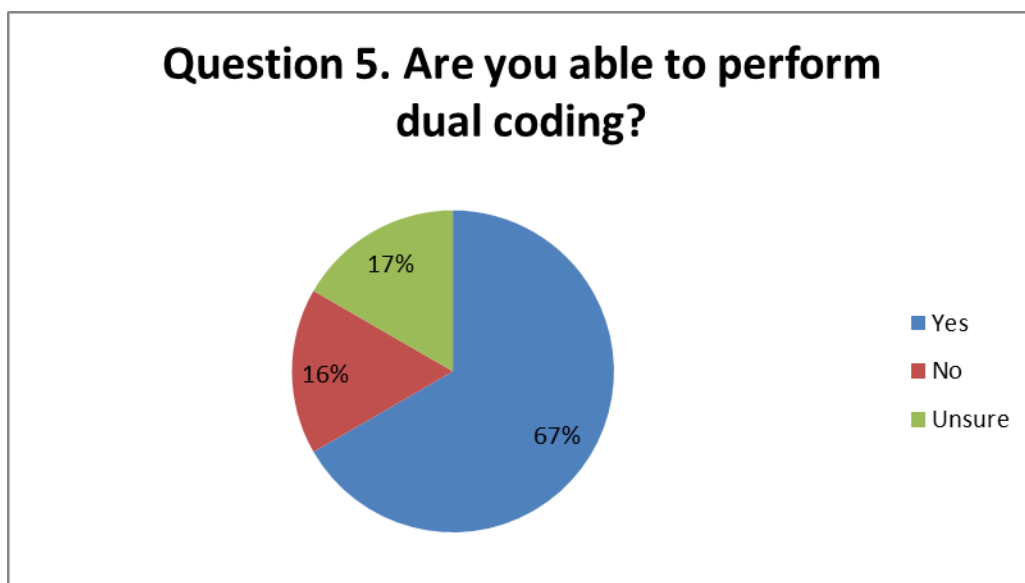


Figure 10

2014 Johnson Survey Physician Training

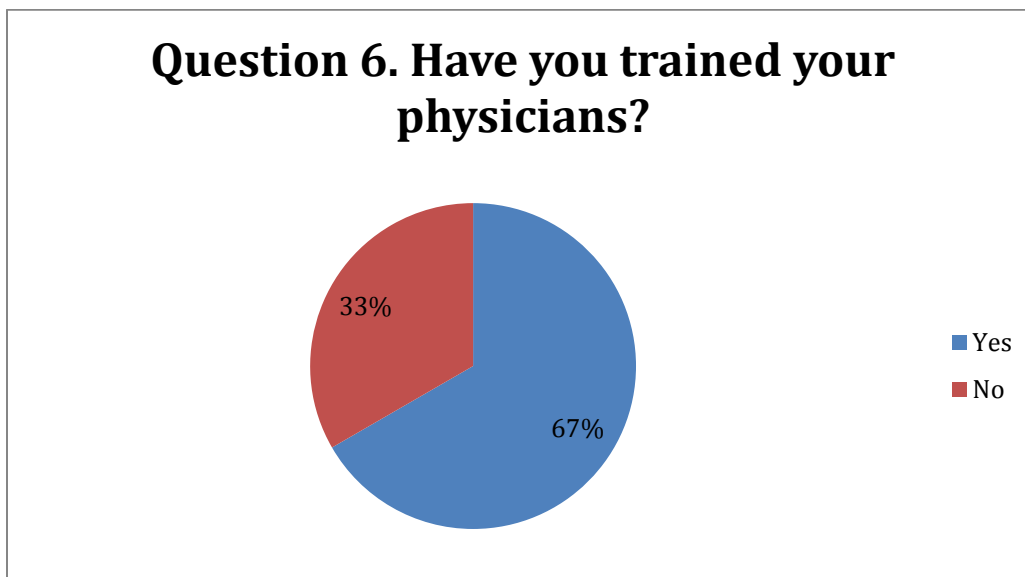


Figure 11

2014 Johnson Survey Training Competency

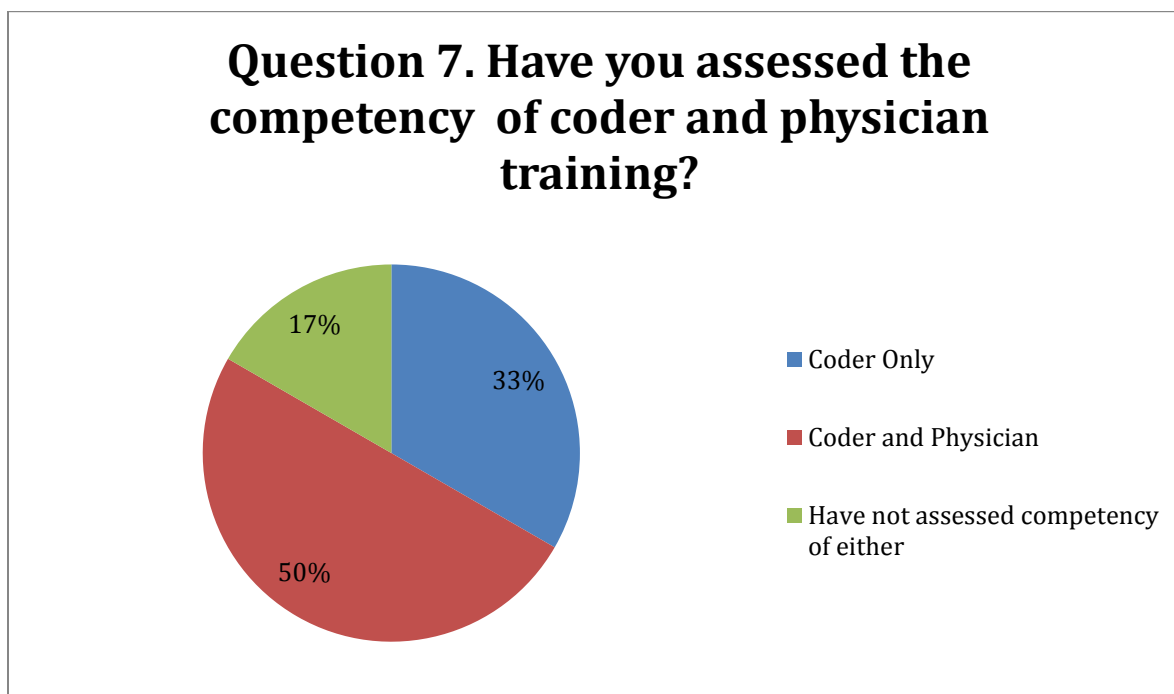
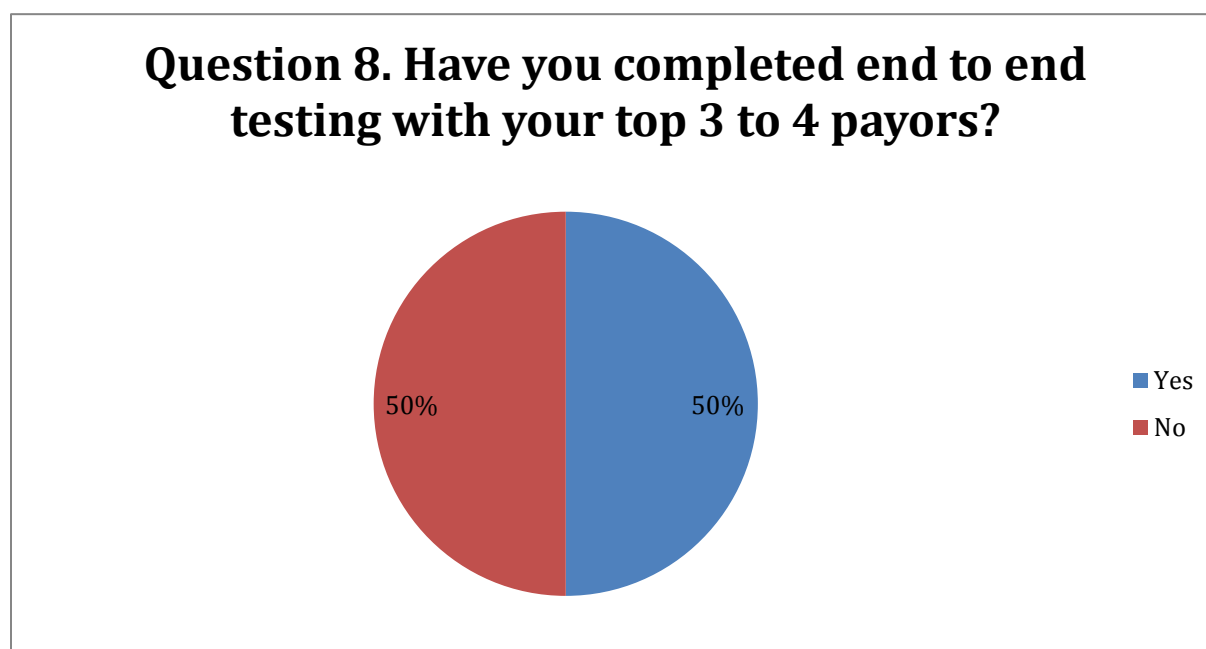


Figure 12

2014 Johnson Survey End to End Testing Hospital



Question 9 of the 2014 Johnson hospital survey - Since the announcement of the ICD-10 implementation delay, identify which of the following best describes your ICD-10 implementation plan? The available responses were a.) Stop the plan, will reconvene in 2015 b.) Continue the plan as not to lose momentum and c.) Other. Five of the six respondents indicated they would continue the plan as not to lose momentum.

Question 10 of the 2014 Johnson survey requested hospitals list any other concerns regarding the ICD-10 implementation. They responded; lack of system upgrades to accommodate the code expansion, provider reimbursement, more delays by congress and the amount of rework. Question 11 asked, What do you know about ICD-11? The six responses were; implementation is slated for 2017, I have not head of it, there is not much difference between ICD-10 and ICD-11, not much and two did not provide a response.

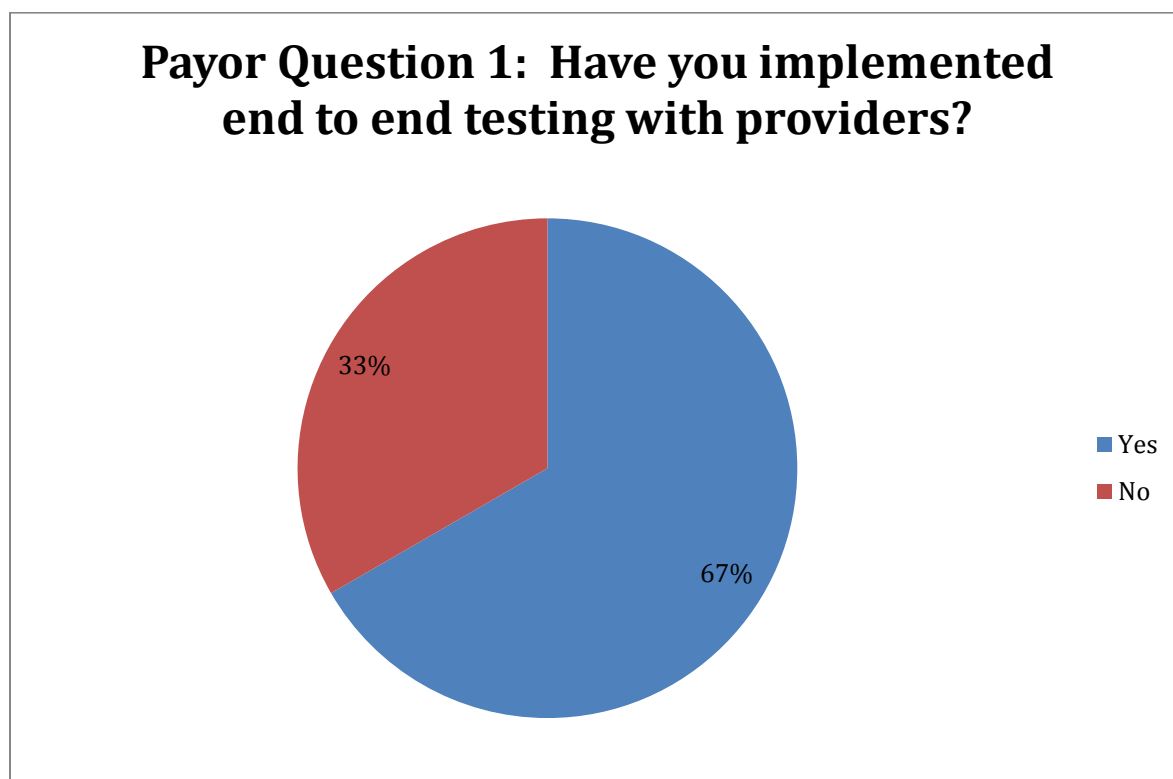
The 2014 Johnson survey was submitted to three payors; Blue Cross Blue Shield of Georgia (BC), United Healthcare (UHC) and Wellcare (WC), all responded; 100% completion rate. There were four questions; one closed end and three open ended. Figure 13 shows payor response to question 1 regarding end-to-end testing.

Question 2 - What feedback is communicated to providers from the test data? Responses to the next three questions will be listed in order of BC, UHC and WC, respectively. Providers are presented a comprehensive package of test data outcomes that includes 835 test claims processed, analysis reports of variances when comparing the ICD-9 previously processed claim to the newly reprocessed ICD-10 test claim along with insights gathered from the claims and variance reports. UHC and Wellcare responded, refer to the our website for any updates.

Question 3 - Is end-to-end testing available to any provider? All answered no with three different explanations. BC indicated they target specific providers based on analysis of the ICD



Figure 13 2014 Johnson Survey End-to-End Testing Payor



-10 impact based on facility claims. UHC is conducting testing with partnered providers and WC replied they are testing with clearinghouses, no direct provider testing.

The 2014 Johnson consultant survey contained four questions. Questions1 - Please describe the major readiness issues you have found in hospitals? Consultant A replied, "Loss of attention and focus. Diversion of personnel to other projects. Increased costs of ICD10 implementation. Inability to keep physicians, coders and key stakeholders interested, and engaged. With the delay, it is important that facilities don't lose their momentum in preparing for ICD10 implementation. "Consultant B replied, Documentation quality needed to support ICD10 coding is unknown and the sense of urgency and project formalization has slipped due to legislative delay. Question 2 - What do you consider as critical factors for a successful

implementation? Consultant A replied, "Optimization of clinical workflow and clinical documentation. The specificity of ICD10 coding is dependent on accurate and complete clinical documentation. Many hospitals don't even realize that they have documentation issues with ICD-9; thus simply taking an ICD9 claim and converting it to ICD10 is not an adequate test. A successful transition to ICD-10 requires that Physicians be educated on the clinical documentation requirements that align with their specialty and are needed for the hospital to provide quality patient care. Consultant B replied, Executive sponsorship and participation on the governance of the transition to ICD10 and a clear list of remediation strategies to limit the impact of the transition to ICD10 to the financial health of the Organization. Question 3 asked, What implementation factors have a financial impact? Consultant A replied, education is a huge factor, physicians and clinicians must understand the importance of clinical documentation, and coders must be fluent in ICD10 coding to minimize risk of leaving dollars on the table. Consultant B wrote, capital expense on computerized-assisted coding technology, training costs to coders and other staff for ICD10 and the potential loss of productivity while coders are getting trained and during transition

The last question asked was surrounding the delay, What advice do you have for hospitals, given the delay? Consultant A - "Keep the ICD10 Payor testing momentum in place. Using the testing data, analyze the DRG shifts. Use this information to drive initiatives such as clinical documentation improvement (CDI) , and contract analysis/negotiations. Take advantage of the testing process by using it as a tool to train/educate coding staff. In addition, keep the lines of communication open, and frequent throughout the organization so as to not lose sight of the ICD10 implementation. Consultant B – stated, use the delay to focus on documentation review to identify specific documentation deficiencies; target physician education

Running head: HOSPITAL ICD-10 IMPACT

based on the deficiencies, use the delay to develop a dual coding strategy and lastly, retain the ICD10 gains made prior to the delay announcement

## **Chapter 5 – Analysis and Discussion**

As previously noted, hospital response was low, only six hospital responded. The lack of hospital participation could be attributed to many factors; a report by WEDI noted that hospitals are becoming complacent due to the delay possibly due to competing regulatory requirements and limited resources for ICD-10 (2014). Consultants A and B recommend hospitals stay on course with clinical documentation and other initiatives of their plan. A study evaluating over 600 inpatient documents by DeAlmeida, Watzlaf, Anania-Firozan, Salguero, Rubinstein, Abdelhak, and Parmanto, revealed specific inadequacies and documentation gaps of 15.4 % (2014). Poor clinical documentation by physicians will lead to either reduced reimbursement or claim denial reasons; if the chart lacks medical necessity or information in the record is not present to support the diagnosis and services provided was also supported by the literature. An HFMA survey provided a similar result; it showed that 72 % of the 139 executives and revenue cycle leaders surveyed rated physician readiness as their top challenge, followed by payor readiness and HIM coding resources (2014). Adamopoulos noted to focus on the physician, that the risk is in the charts, advising review of current charts for deficiencies. The purpose is to ensure physicians note the complications and co-morbidities to capture the specificity and ensure appropriate reimbursement (2013).

Physician education and clinical documentation are actually antonymous. Time and resources must be allocated to develop physician education to address training in their area of specialty as noted by Dr. Huff, former physician, now consultant and AHIMA approved ICD-10 trainer. He also notes that training should not be conducted too early, instead begin at ten months prior to go live and to ensure retention and success, conduct peer - to - peer training; physicians training other physicians (Butler 2014).

WEDI partnered with Aetna and Blue Cross to facilitate payor readiness, both had significant visibility with the partnership via their website, conference presentations and position papers; however Cigna's transparency proved more visibility and ICD-10 information availability (2013). Cigna was very detailed, siting steps they have taken to ensure vendor and system compliance, noting two projects completed in 2012; one to ensure system acceptance of ICD-10 codes for claims, precertification's and authorizations and the second for internal testing of systems. In 2013 and 2014 they implemented end to end testing that included receipt and return of data to claims vendors and direct submission hospital providers. They also noted that training of their technical and clinical staff began in 2012 with additional training to be provided closer to the ICD-10 implementation (Cigna, 2014). Other payors adopted standard position statements that almost mirror each other as noted from two of the payor respondents for this survey, for example, UHC's position stated, "We will comply with the October 1, 2015 deadline". This type of statement substantiates "payor readiness", as being a major concern impacting cash flow as shown in Figure 4.

The fear of hospital providers is the ICD-10 conversion will be a repeat of the 5010 conversion previously noted by Mrs. Bragg, where claims vendors and payors said after test claims were submitted, "we are ready for the 5010 conversion" (Personal Interview, July 2014). Most recently Ms. Cathy Steadman, Channel Sales Manager with Relay Health Connectivity Solutions admitted they were wrong in their 5010 approach and those lessons learned will ensure adequate resources are allocated to ICD-10, they underestimated the impact to providers (Personal Interview, September 2, 2014).

The financial impact of the ICD-10 conversion has not been easy to quantify in the Johnson study as well as the research studies. In 2004, the Rand Corporation, a nonprofit

research organization conducted a study to identify costs and benefits. Their results showed training costs of \$3,000,000 per coder and \$50,000,000 per physician. Utilizing the most current physician census data from Young from the 2012 census, of 878,194 physicians, this would equate to \$56,935 per physician (2013). Total system cost per the American Hospital Association (AHA) was \$200,000,000. Using the same methodology to determine per hospital costs, of dividing the AHA system cost by the 2004 number of registered hospitals of 5,749 in the U.S. or \$34,768 per hospital does not pass the reasonableness test. The AHA defines registered hospital as an institution accredited as a hospital by the Joint Commission on Accreditation of Healthcare Organizations or is certified as a provider of acute services under Title 18 of the

Table 2 Nachimson Study

	Typical Small Practice	Typical Medium Practice	Typical Large Practice
Training	\$2,700-\$3,000	\$4,800-\$7,900	\$75,100
Assessment	\$4,300-\$7,000	\$6,535-\$9,600	\$19,320
Vendor/Software Upgrades	\$0-\$60,000	\$0-\$200,000	\$0-\$2,000,000
Process Remediation	\$3,312-\$6,701	\$6,211-\$12,990	\$14,874-\$31,821
Testing	\$15,248-\$28,805	\$47,906-\$93,098	\$428,740-\$880,660
Productivity Loss	\$8,500-\$20,250	\$72,649-\$166,649	\$726,487-\$1,666,487
Payment Disruption	\$22,579-\$100,349	\$75,263-\$334,498	\$752,630-\$3,344,976
<b>Total Costs</b>	<b>\$56,639-\$226,105</b>	<b>\$213,364-\$824,735</b>	<b>\$2,017,151-\$8,018,364</b>

Note: “The Cost of Implementing ICD-10 for Physician Practices – Updating the 2008 Nachimson Advisors Study”, by C. Hartley and S. Nachimsom, 2014, Nachimson Advisors. Copyright 2014 by The AMA. Reprinted with permission.

Social Security Act and has provided the Association with documents verifying the accreditation or certification. (2014). Using the Nachimson study appears to have more validity. Much of the industry endorsed the Nachimson physician practice study. For purposes of this research, the column labeled “Typical Large Practice” will represent a typical small hospital, noted per Table 2 at \$2,000,000 to \$8,018,364. (Hartley, 2014). Impact per respondent facility in the 2014 Johnson was zero dollars to \$19,000,000.

### **Coder Productivity**

Accurate code assignment is a by-product of accurate clinical documentation. To identify losses in coder productivity, DeAlmeida, et.al used HCPro’s twenty minute benchmark per record to determine that it would take 219 hours to code the 656 records in their study. The results of their study revealed that coding time doubled. They also noted that studies in Canada and Australia found that it took approximately four to six months for coders to regain the pre ICD-10 coding productivity (2014). A reduction in coder productivity was also validated via a coding productivity study of fifty-four inpatient records conducted by UC and UT-SBMI. The results showed that on average, coding time increased by seventeen minutes. The variance per coder was attributed to the number of hours training versus the experience level of the coder (Stanfill, 2014).

Almost 70% of the hospitals surveyed have trained their coders as opposed to 70% that have not trained their physicians; physician training was also their greatest challenge. System functionality for dual coding is also a key factor for success noted by CEO, of TrustHCS, Torrey Barnhouse to engage physicians early in the ICD-10 training followed by dual coding of high risk cases by specialty. Through their consulting engagements they have found that dual coding should be the driver for physician training and should not be held until last (2014). The research

found that having the ability to evaluate coder and physician training can be accomplished by early adopters of dual coding, as well as end-to-end testing. Providing feedback and comparing the two coding methods will reinforce the training, identify gaps in training and provide direction for improvements in clinical documentation and/or code assignment.

### **Delay**

AHIMA was vocal and aggressive in their response to the U.S. House of Representatives new language inserted into the Protecting Access to Medicare Act of 2014 to delay the ICD-10 implementation from October 1, 2014 to October 1, 2015. They actively called on their 71,000 members and all supporters of ICD-10 to contact their representatives in Congress to take the ICD-10 provision out of the bill (AHIMA, 2011 and 2014).

Several months after the announcement of the delay many began to weigh in on the delay. Daly reported that the additional time could actually save money, that tardy providers could benefit and prepared providers would incur more costs by having to retrain and retest again in 2015. Daly also reported that Fitch Ratings noted the delay was a positive credit development for not-for-profit hospitals because the 2014 conversion date was poised to have a disruption to their revenue cycle posing a negative credit impact (2014). Fitch is one of three top ranked credit rating agencies that provide a ranking for business credit worth (2014). Preparation is the key to a successful transition.

A very critical success factor in a provider's implementation plan as identified by CMS, KPMG, and HFMA is end-to-end testing. The research data showed that all hospitals had not completed end to end testing. Figures 12 and 13 reflect the 2014 Johnson study, showing 50 percent of hospitals had completed end- to- end testing and almost 70% of payors had completed end- to-end testing with hospitals.



To achieve a successful transition to ICD-10, this study recommends that hospital providers develop an ICD-10 implementation plan with a project leader. The critical success factors include; target training on top DRGs, high volume and, high volume services, provide extensive training in these areas for all coders and focused peer physician training, dual coding, end-to-end payor testing, and a post implementation contingency plan. System functionality plays a pivotal role in success of implementation and lack of system upgrades to accommodate code expansion. Vendors are required to meet HIPAA standards, however, they are not held to the same standard as providers. A vendors' success garners on their contract and desire to maintain good and long relationships. A vendor survey was not included in the 2014 Johnson survey; however the research showed that vendors were inconsistent in their progress as were the hospitals. Upgraders were not on schedule, beta testing was only in progress with select customers, vendors were just not ready.

A 100% completion rate was attained when two healthcare patient accounting consultants were asked to complete the survey and answered four questions, all open ended. Responses will be reported as consultant A and consultant B.

Feedback from the healthcare industry consultants as well as those identified from the survey and the research can all be mitigated with developing and executing an implementation plan. Examination of other survey questions revealed physician training as the greatest challenge and clinical documentation as having the greatest impact to cash. However when asked to quantify the impact, only two facilities were able to attach a number to the designated impact. Does this mean there was not financial impact to the other facilities, to the contrary it was due to limited resources available to perform due diligence to document impact. Time, resources, and money were the major theme surrounding all questions.

Non-financial impact identified by over 200 providers via HIMSS financial risk partner, Jvion concluded that ICD-10 will continue to stretch already overtaxed resources in IT and coding, coder productivity continues to be understated, lack of third party vendor readiness, physician education and poor documentation will contribute to increased denials and lower reimbursement. Major impact was noted in the business process review of the entire revenue cycle where codes are used. Jvion Director and Co-lead, Allison Alavi encouraged providers that utilized the financial risk calculator tool to understand the code set's financial risks to take the next step of identify the exact codes that will threaten reimbursement and develop action steps to mitigate potential losses. (2013).

Best practices note development of two distinct plans; the implementation previously addressed and the contingency. The contingency plan per CMS should include steps to continue operations if problems or issues occur. Risks should be ranked with definitive action items to quickly address issues whether, system functionality, payor edits or staffing concerns (2014). The Revenue Cycle Strategists' response to staffing contingency is to attain contract resources now to work through any existing backlogs in coding and outstanding accounts receivable. This will position the hospital for potential delays and provide trained resources if needed after the ICD-10 go-live. In addition, they recommend investing in automated tools with computer assisted coding (CAC) and automated denial tools to facilitate timely identification of denials and rejections (2014). AHIMA reported that Canadian hospitals implemented overtime for coding staff which eliminated the backlogs and used the opportunity to provide additional ICD-10 training (Johnson, 2014).

Developing an ICD-10 implementation and a contingency plan can be compared to one of the most successful coaches in college football, the late Paul "Bear" Bryant from the

University of Alabama in Tuscaloosa, AL. One of his rules for winning was, “Have a plan for everything and stick to it, have a plan for practice, a plan for the game, a plan for being ahead and a plan for being behind 20 – 0 at the half” (Mink, 2000). It appears a key to success is to develop a plan, work the plan and plan for the unexpected.

## **Chapter 6 – Conclusion**

Failure to quantify ICD-10 impact was not due to a lack of financial impact but to the inability to identify the dollars associated with each of the concerns. In fact, three of six facilities in the 2014 Johnson survey indicated that clinical documentation would have the greatest impact on cash flow, which equated to an average of \$6 million per facility. The averages for the other categories in order of impact were payor readiness at \$4.2 million, system readiness at \$4 million and ICD-10 code assignment at \$2.6 million.

Critical success factors to lessen this financial impact are identified from the 2014 Johnson survey and the CMS in their guide for small hospitals (2014). Most all can be mitigated by taking advantage of the congressional mandate which delayed implementation until October 1, 2015.

The result of this study showed total impact for all categories as \$17 million, compared to Nachimsom and KPMG respectively, at \$8 million and \$15 million. End-to-end testing is at the core of impact and success. It was the resounding cry of the AMA, HIMSS, HFMA, AHIMA and the 2014 Johnson surveyed facilities. In October of this year the Medicare Administrative Contractors (MAC) announced selection of volunteers to participate in the first round of ICD-10 testing in January 2015. Ironically, one of the six hospitals of the 2014 Johnson survey was selected by their clearinghouse to participate in the test of Medicare claims. One of the major prerequisite questions for participation from Lasheena Morant, Account Executive with Relay was “Is your system able to submit future date claims?” (Personal Interview, November 6, 2014) The question was not, “Will your system be able to submit ICD-10 claims but instead is your system able to submit future date claims today?”

In their November 5, 2014 provider open forum, CMS stated that goals for testing are to demonstrate that providers are able to successfully submit claims with ICD-10 diagnosis codes to the Medicare Fee For Service (FFS) claims system, that the CMS software changes made to support ICD-10 result in appropriately adjudicated claims and most importantly, accurate remittance advices are produced generating accurate payments (CMS, 2014)

Abridged answers to the research questions from the literature and the 2014 Johnson survey are reflected:

- What factor or factors pose the greatest impact to the hospital provider?

Physician training.

- What will have the greatest impact to cash flow?

Clinical documentation, physician training and coder training.

- What are the critical success factors to mitigate the impact?

Develop an implementation plan that includes coder and physician training, dual coding for coders and physicians, system and payor readiness for dual coding and end-to-end testing. A sound contingency plan.

Recommendations and validation can be attained via re-survey of providers, consultants and payors after the ICD-10 implementation and receipt of subsequent remittance advices from major payors; specifically Medicare. Recognize that one of the same study limitations - lack of participation, may also occur. If a provider's ICD-10 implementation is successful, response rates may be high, however if there is a repeat of the 5010 conversion, providers will not be motivated to participate until after all issues are resolved. To facilitate participation, the researcher could provide a user friendly mechanism and or methodology to capture data for dollar impact. If not, results of the new survey may mirror the 2014 Johnson survey.

## References

- Adamopoulos, H. 2013. The Financial Risks of Transition to ICD-10: Key Considerations for Hospitals and Health Systems. Retrieved from [Http://www.beckershospitalreview.com/finance/the-financial-risks-or-transitioning-to-icd-10-key-considerations-for-hospitals-and-health-systems.html](http://www.beckershospitalreview.com/finance/the-financial-risks-or-transitioning-to-icd-10-key-considerations-for-hospitals-and-health-systems.html)
- Agency for Healthcare Research and Quality. 2011. Primary Care Workforce Facts and Stats No.1. Retrieved from <http://www.ahrq.gov/research/findings/factsheets/primary/pcwork1/pcwork1.pdf>
- Alavi, A. Jvion Releases HIMSS ICD-10 Financial Risk Calculator Findings. 2013. Retrieved from <http://www.prweb.com/printer/10651943.htm>
- American Health Information Management Association. (2014). Membership. Retrieved from <http://www.ahima.org/membership>
- American Health Information Management Association. Universal Use of ICD-10-CM/PCS in the US. 2013. Retrieved from [http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1\\_050432.pdf](http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_050432.pdf)
- American Hospital Association. (2014). Registration Requirements for Hospitals. Retrieved from [http://www.aha.org/research/rc/stat-studies/REGISTRATION\\_FY\\_08.pdf](http://www.aha.org/research/rc/stat-studies/REGISTRATION_FY_08.pdf)
- American Medical Association. (2014). ICD-10 FAQs. Retrieved from [www.ama-assn.org/ama/pub/physician-resources/solutions-managing-your-practice/](http://www.ama-assn.org/ama/pub/physician-resources/solutions-managing-your-practice/)

Coding-billing-insurance/hipaahealth-insurance-portability-accountability-  
Act/transaction-code-set-standards/icd10-code-set.page?

American Medical Association. (2014). ICD-10 Costs for Physician Practices Study.

Retrieved from

[https://download.ama-assn.org/resources/doc/washington/x-pub/icd-10-costs-  
for-physician-practices-study.pdf](https://download.ama-assn.org/resources/doc/washington/x-pub/icd-10-costs-for-physician-practices-study.pdf)

American Medical Association. (2014). Letter to Kathleen Sebelius. Retrieved from

ICD-10 Cost Estimates Increased for Most Physicians.

[http://www.ama-assn.org/ama/pub/news/news/2014/2014-02-12-icd10-cost-  
estimates-increased-for-most-physicians.page](http://www.ama-assn.org/ama/pub/news/news/2014/2014-02-12-icd10-cost-estimates-increased-for-most-physicians.page)

American Medical Association. Nachimson Advisors, LLC Making Health IT Useful.

Retrieved from [www.ama-assn.org/ama/pub/news/news/2014/2014-02-12-  
icd10-cost- estimates-increased –for-most physician.page](http://www.ama-assn.org/ama/pub/news/news/2014/2014-02-12-icd10-cost-estimates-increased-for-most-physician.page).

Barnhouse, Torrey. (2014). AHIMA Journal. 4 Lessons for ICD-10 Readiness. Retrieved

From <http://library.ahima.org/expedio/groups/publis/documents/ahima>

Bowman, Sue. 2013. Testimony of the American Health Information Management

Association to the National Committee on Vital and Health Statistics – Standards

Committee. Retrieved from <http://www.ncvhs.hhs.gov/130618p13.pdf>

Butler, Mary. 2014. HIM Frontlines: Peer-to-Peer ICD-10 Training. Retrieved from

<http://journal.ahima.org/2014/02/28/him-frontlines-peer-to-peer-icd-10-training>

Centers for Medicare and Medicaid Services. 2014. ICD-10 Implementation guide for Small

- and Medium Practices. Retrieved from [www.cms.gov/Medicare/Coding/ICD10/downloads/ICD10Smallandmediumpractices508.pdf](http://www.cms.gov/Medicare/Coding/ICD10/downloads/ICD10Smallandmediumpractices508.pdf).
- Cigna. 2014. ICD-10 Network News Compliance Date Delay. Retrieved from [http://www.cigna.com/assets/docs/health-care-professionals/877121\\_q2%202014\\_network\\_news\\_final.pdf](http://www.cigna.com/assets/docs/health-care-professionals/877121_q2%202014_network_news_final.pdf)
- Daley, J. (2013). Workgroup for Electronic Data Interchange ICD-10 Survey Results. Retrieved from <http://www.wedi.org/docs/news/icd-10-survey-results-summary.pdf?sfrsn=0>
- Daly, Rich. (2014). Delay of ICD-10 Implementation to 2015 Carries Costs, Benefits. Healthcare Financial Management. XXXXXXXXXXXXcopyright publisher, etc.
- DeAlmeida, Watzlaf, Anania-Firouzan, Salguero, Rubinstein, Abdelhak & Parmanto. (Winter 2014), 1 - 16. Evaluation of Inpatient Clinical Documentation Readiness for ICD-10 CM. *Perspectives in Health Information Management*. Retrieved from <http://perspectives.ahima.org/evaluation-of-inpatient-clinical-documentation-readiness-for-icd-10-cm/#.VBWK28J0wqQ>
- Dimic, Chris. (2014). Congress to Vote on ICD-10 Delay Tomorrow, AHIMA Calls for Action to Stop Bill Today. *Journal of AHIMA*. Retrieved <http://journal.ahima.org/2014/03/page/2/>
- Fitch Ratings. 2014. About Us. Retrieved from: <https://www.fitchratings.com/web/en/dynamic/about-us/about-us.jsp>
- Harman, L. B. & Nielsen, C.S. (2009). Research and Ethics. In E. Layman & V. Watzlaf (Eds.),



- Health Informatics Research Methods Principles and Practice (pp. 341-348) Chicago, IL: American Health Information Management Association.
- Hartley, C. & Nachimson, S. (2014). The Cost of Implementing ICD-10 for Physician Practices Updating the 2008 Nachimson Advisors Study
- Healthcare Costs and Utilization Project. (2005). Number and Characteristics of U.S. Hospitals. Retrieved from [http://www.hcup-us.ahrq.gov/reports/factsandfigures/figures/2005/2005\\_1\\_1a.jsp](http://www.hcup-us.ahrq.gov/reports/factsandfigures/figures/2005/2005_1_1a.jsp)
- Healthcare Financial Management Association. (2014). HFMA's Revenue Cycle ICD-10 Readiness Survey Summary of Results & Finding, Sponsored by 3M HIS. Retrieved from <http://www.hfma.org/ICD-10ReadinessSurvey/>
- HIPAA Administrative Simplification: Modifications to Medial Data code Set Standards to Adopt ICD-10CM and ICD-10-PCS, 74Fed. Reg. 3328 (to be codified at C.F.R. 45, Part 1710, 162).
- Integrus Solutions. 2014. Complexities Associated with ICD-10 Data Flow. Retrieved from [wwwIntegrus/news](http://www.Integrus/news).
- Johnson, Kerry. 2004. Implementation of ICD-10 Experiences and Lessons Learned from a Canadian Hospital. Retrieved from <http://library.ashima.org/xpedio/groups/public/documents/ahima/bok3005558.6csp?DOCName=bok3005558>.
- KPMG. Healthcare Entities Largely Unprepared for ICD-10 Implementation: KPMG Survey. ICD-10 Readiness: A Comprehensive Look At Its Effect on the Business of Healthcare. 2014. Retrieved from [mjcaruso@kpmg.com](mailto:mjcaruso@kpmg.com)  
<http://www.kpmg-institutes.com/institutes/healthcare-life-sciences-institute.html>

Medical Group Management Association. Letter to The Honorable Kathleen Sebelius regarding ICD-10 end to end testing. 2013. Received from MGMA website Libraries/Assest/Government%20Affairs/Issues/Health%20Information%20Technology/ICD-10/ICD-10-end-to-end-testing-leter-to-Sec.-Sebelius.pdf.

Merriam-Webster Collegiate Dictionary. (2014). Retrieved from

<http://www.merriam-webster.com/dictionary/impact>

Mink, Michael. 2000. Football coach Paul 'Bear' Bryant Determination Drove him and His Players to Victory. Retrieved from <http://news.investors.com/management-leaders-in-success/102300-349811-football-coach-paul-bear-bryant-determination-drove-him-and-his-players-to-victory.htm>

Rand Corporation. (March 2004). The Costs and Benefits of Moving to the ICD-10 Code Sets.

Retrieved from

[http://www.rand.org/pubs/technical\\_reports/2004/RAND\\_TR132.pdf](http://www.rand.org/pubs/technical_reports/2004/RAND_TR132.pdf)

Revenue Cycle Strategists. (2014). 5 Strategies for Smoothing the Road to ICD-10.

Retrieved from. <http://www.hfma.org/WorkArea/DownloadAsset.aspx?id=22543>

Rudman, W. J. & Hart-Hester, S & Brown, C. A. (2009). Research and Ethics. In E. Layman & V. Watzlaf (Eds.), Health Informatics Research Methods Principles and Practice (pp. 341-348) Chicago, IL: American Health Information Management Association.

Rudman, W.J. , Hart-Hester,S. & Brown, C.A. (2009). Research Reviews and Secondary Analysis. In D. Layman, & V. Watzlaf (Eds). Health Informatics Research Methods Principles and Practice. (pp.180-181)Chicago, IL: The American Health Information Management Association.

Stanfill, M, Ksieh, K. etal. Preparing for ICD-10-CM/PCS Implementation: Impact on Productivity and Quality. 2014 Retrieved from [perspectives.ahim.org](http://perspectives.ahim.org).

WEDI. 2014. Survey retrieved from [WEDI.org/docs/comment-letters/comment-letter-and-summary-of-results.pdf?sfvrsn=0](http://WEDI.org/docs/comment-letters/comment-letter-and-summary-of-results.pdf?sfvrsn=0)

Workgroup for Electronic Data Interchange. 2013. ICD-10 End-to-End Testing A payor Perspective. Retrieved from [WEDI.org/forms/uploadFiles/36BEE0000542.toc.7.31 Payor Combined.pdf](http://WEDI.org/forms/uploadFiles/36BEE0000542.toc.7.31Payor%20Combined.pdf).

World Health Organization. (2014). Retrieved from the world health international, [about/en](http://www.who.int/about/en).

World Health Organization. (2014). Retrieved from [www the who international classifications/icd/en](http://www.who.int/classifications/icd/en).

Young, A. A Census of Actively Licensed Physician in the United States, 2012. Journal of Medical Regulation Vol 99, No. 2014. Retrieved from [FSMB journal](http://FSMB.org), volume 99, v99N2



MGMA Center for Research  
American College of Medical Practice Executives  
Medical Group Management Association

July 23, 2013

The Honorable Kathleen Sebelius  
Secretary  
U.S. Department of Health and Human Services  
Hubert H. Humphrey Building, Room 445-G  
200 Independence Avenue, SW  
Washington, DC 20201

## Appendix A

Dear Secretary Sebelius:

The Medical Group Management Association (MGMA) is extremely concerned with the Medicare announcement that it will not be conducting ICD-10 end-to-end testing with external trading partners, including physician practices. We strongly urge that you immediately reverse this policy and expedite Medicare ICD-10 end-to-end testing. This action would decrease the potential of a catastrophic back-log of Medicare claims following the Oct. 1, 2014 compliance date. Failure to do so could result in significant cash flow disruption for physicians and their practices, and serious access to care issues for Medicare patients.

MGMA-ACMPE is the premier association for professional administrators and leaders of medical group practices. Since 1926, the Association has delivered networking, professional education and resources, advocacy and certification for medical practice professionals. The Association represents 22,500 members who lead 13,200 organizations nationwide in which some 280,000 physicians provide more than 40 percent of the healthcare services delivered in the United States.

ICD-10 will be one of the most significant changes the physician practice community has ever undertaken—impacting both the clinical and administrative sides of every care delivery organization. End-to-end testing between trading partners is absolutely critical to measure operational predictability and readiness, and also to identify any roadblocks well in advance of the compliance date. In addition, commercial health plans traditionally take their direction on these types of operational issues directly from Medicare. With Medicare refusing to engage in end-to-end testing with their physician practice partners it is likely that many of these commercial plans will also not test. Again, this could result in practitioners not being paid for their services and disruption to healthcare service delivery.

Historically, Medicare has committed to testing with external trading partners for all significant coding and HIPAA-related transaction requirements. These partnerships with providers, clearinghouses and vendors was very successful in identifying issues and unintended consequences well in advance of full implementation. Most recently, Medicare conducted end-to-end testing with external trading partners for the industry-wide transition from HIPAA Version 4010 to Version 5010. In its outreach effort to providers, the Centers for Medicare & Medicaid Services (CMS) even held a highly successful “National HIPAA 5010 Testing Week,” encouraging providers to test directly with Medicare. This national testing initiative not only resulted in large numbers of providers testing transactions with their Medicare contractors, but many commercial health plans also took the opportunity to encourage providers to test with them during that week. This testing week, occurring some six months prior to the compliance date, also significantly increased the visibility of the Version 5010 issue, especially with small and rural providers.

We also note that on September 28, 2012 CMS contracted with National Government Services (NGS) to develop the “End-to-End Testing Pilot of the Administrative Simplification Requirements,” with the goal of setting industry

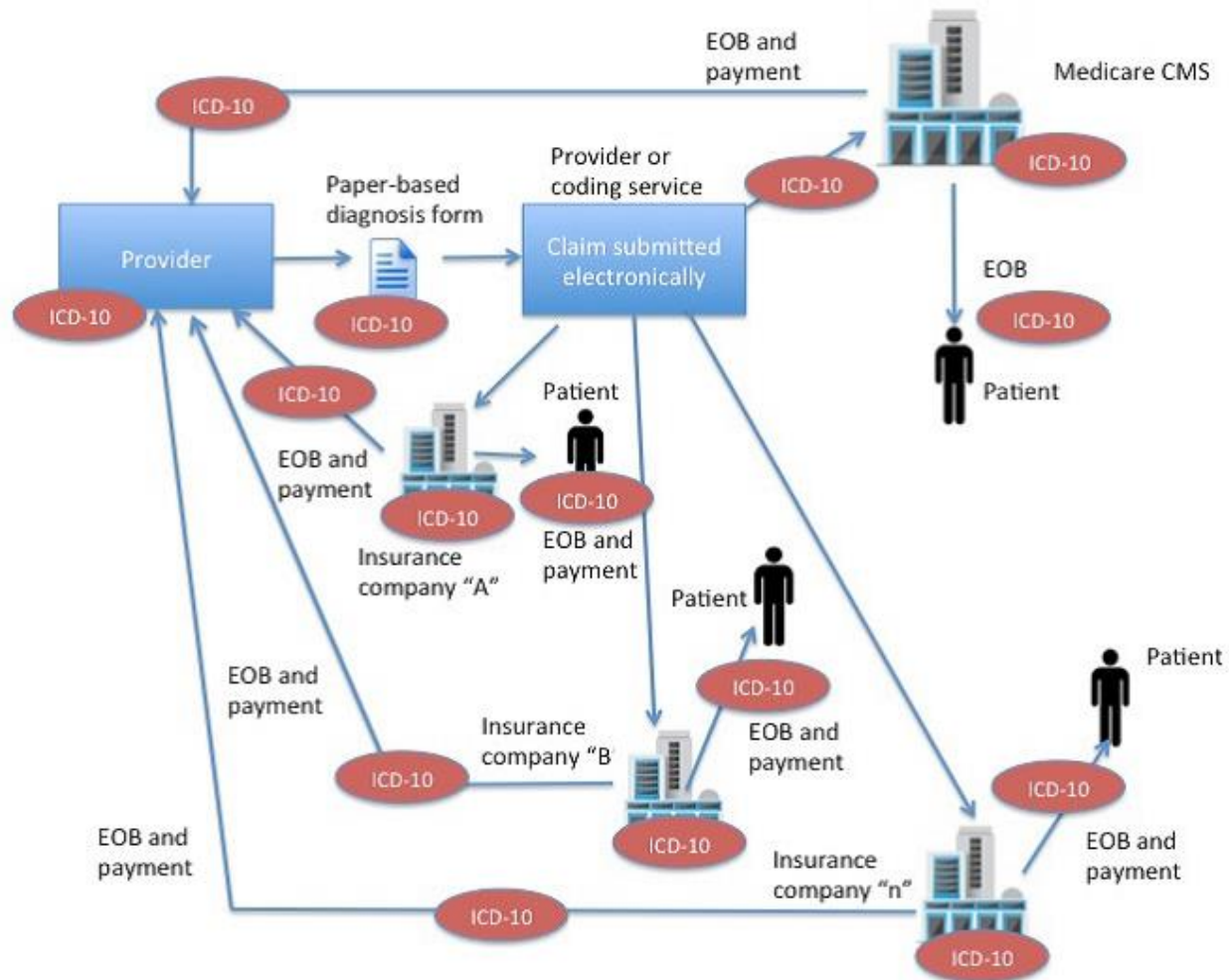
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GOVERNMENT AFFAIRS  
1717 Pennsylvania Avenue  
North West, Suite 600  
Washington, DC 20006  
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fax: 202.293.2787

[www.mgma.com](http://www.mgma.com)

## Appendix B

### Integrus Solutions: Complexities Associated with ICD-10 Data Flow 2014



## Appendix C

### Hospital Survey – ICD-10 Impact on Hospital Providers

<p>1. What is your greatest challenge? Please rank in order of challenge.</p> <ul style="list-style-type: none"><li>a. Training Coders</li><li>b. Training Physicians</li><li>c. Coding Resources</li><li>d. Payor Testing</li><li>e. System Limitations</li><li>f. Other – please list</li></ul>
<p>2. What do you feel will impact cash flow? Please rank in order of greatest impact.</p> <ul style="list-style-type: none"><li>a. Payor Readiness</li><li>b. Clinical Documentation</li><li>c. ICD-10 code assignment</li><li>d. System Readiness</li><li>e. Other – please list</li></ul>
<p>3 Quantify the above financial impact in dollars, i.e. \$10,5000,000</p> <ul style="list-style-type: none"><li>a. Payor Readiness \$</li><li>b. Clinical Documentation \$</li><li>c. ICD-10 code assignment \$</li></ul>

<p>d. System Readiness \$</p> <p>e. Other \$</p>
4 Have you trained your coders? Yes or No
5. Are you able to perform dual coding? Yes or No
6. Have you trained your physicians? Yes or No
<p>7. Have you assessed the competency of coder and physician training? Yes or No</p> <p>If yes, please explain</p>
<p>8. Have you completed end to end testing with your top 3 to 4 commercial payors? Yes No</p> <p>If yes, what did you learn?</p>
<p>9. Since the announcement of the ICD-10 implementation delay, identify which of the following best describes your ICD-10 implementation plan?</p> <p>a. Stopped the plan, will reconvene in 2015</p> <p>b. Continue the plan as not to lose momentum</p> <p>c. Other</p>
10. List any other concerns regarding ICD-10 implementation?
11. What do you know about ICD-11?

## Appendix D

### ICD-10 Payor Survey

ICD-10 Payor Readiness							
1 Have you implemented end to end testing with providers?							
Yes							
No							
If no, please explain.							
2 What feedback is communicated to providers from the test data?							
3 Is end to end testing available to any provider?							
Yes							
No							
If no, please explain.							
4 What has been your greatest challenge in preparing for ICD-10?							



## Appendix E

### ICD-10 Consultant Survey

Consultant Survey	
1	Please describe the major readiness issues you have found in hospitals?
2	What do you consider as critical factors for a successful implementation?
3	What implementation factors have a financial impact?
4	What advice do you have for hospitals given the delay?

## **Appendix F**

Consent Disclosure Statements for Survey Research

June 2, 2014

### ICD-10 Implementation Financial Impact

This survey is part of a research study to identify the financial impact of ICD-10 preparation and implementation. It will be completed by acute care hospital employees, industry consultants and peer hospital staff. It involves answering eleven questions and will take approximately 20 minutes. The research is being conducted by Gwendolyn Johnson, a University of Tennessee Health Science Center graduate student in the department of Health Informatics and Information Management. The information gained will facilitate provider implementation to foster steady revenues and positive cash flows post implementation. Your specific information will be confidential, used only by the researcher and reported in aggregate. Participation in this survey is voluntary; failure to participate will not have any adverse effects on you or your organization. Your participation is greatly appreciated.

## **Appendix G**

## IRB Exempt Approval Letter

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THE UNIVERSITY OF TENNESSEE  
Health Science Center

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Institutional Review Board  
910 Madison Avenue, Suite 600  
Memphis, TN 38163  
Tel: (901) 448-4824

July 11, 2014

Gwendolyn Denise Johnson  
UTHSC - COAHS - Health Informatics & Info Management

**Re: 14-03221-XM**

**Study Title:** The Impact of ICD-10 Implementation on Hospital Providers

Dear Ms. Johnson:

The Administrative Section of the UTHSC Institutional Review Board (IRB) has received your written acceptance of and/or response dated 07/10/2014 10:26:28 AM CDT to the provisos outlined in our correspondence of June 17, 2014 concerning the application for the above referenced project. The IRB determined that your application is eligible for **exempt** review under 45 CFR 46.101(b)(2) in that the study involves eligible research using educational tests, survey, interview procedures, or observation of public behavior. In accord with 45 CFR 46.116(d), informed consent may be altered, with the cover statement used in lieu of an informed consent interview. The requirement to secure a signed consent form is waived under 45 CFR 46.117(c)(2). Willingness of the subject to participate will constitute adequate documentation of consent. Your application has been determined to comply with proper consideration for the rights and welfare of human subjects and the regulatory requirements for the protection of human subjects. Therefore, this letter constitutes full approval of your application (version 1.0), consent cover statement and survey, stamped approved by the IRB on July 11, 2014 for the above referenced study.

In the event that volunteers are to be recruited using solicitation materials, such as brochures, posters, web-based advertisements, etc., these materials must receive prior approval of the IRB.

Any alterations (revisions) in the protocol, consent cover statement, or survey] must be promptly submitted to and approved by the UTHSC Institutional Review Board prior to implementation of these revisions. In addition, you are responsible for reporting any unanticipated serious adverse events or other problems involving risks to subjects or others in the manner required by the local IRB policy.

Sincerely,



Signature applied by Cameron A Barclay on 07/11/2014 04:37:09 PM CDT



Signature applied by Terrence F Ackerman on 07/11/2014 04:37:59 PM CDT

Cameron Barclay, MSA, CIP  
IRB Director  
UTHSC IRB

Terrence F. Ackerman, Ph.D.  
Chairman  
UTHSC IRB

## Appendix H



JAMES L. MADARA, MD  
EXECUTIVE VICE PRESIDENT, CEO

ama-assn.org  
T (312) 464-3000

February 12, 2014

Kathleen Sebelius  
Secretary  
US Department of Health and Human Services  
Hubert H Humphrey Building, Room 445-G  
200 Independence Avenue, SW  
Washington, DC 20201

Dear Secretary Sebelius:

On behalf of the physician and medical student members of the American Medical Association (AMA), I am writing to you concerning ICD-10. Regardless of any informational reports or material posted on our website that discuss the feasibility of ICD-10 or ICD-11, AMA policy adopted by our House of Delegates calls for repealing ICD-10 for the simple reason that it is not expected to improve the care physicians provide their patients and, in fact, could disrupt efforts to transition to new delivery models. The transition to ICD-10 represents one of the largest technical, operational, and business implementation in the health care industry in the past several decades. Implementing ICD-10 requires physicians and their office staff to contend with 68,000 diagnosis codes—a five-fold increase from the approximately 13,000 diagnosis codes in use today. The broad use of ICD-10 codes for determining reimbursement, coding in all health care settings, and health care coverage has not been done in other countries, making the U.S. implementation unprecedented.

By itself, the implementation of ICD-10 is a massive undertaking. Yet, physicians are being asked to assume this burdensome requirement at the same time that they are being required to adopt new technology, re-engineer workflow, and reform the way they deliver care; all of which are interfering with their ability to care for patients and make investments to improve quality.

The AMA recognizes that our position on ICD-10 is at odds with many other well-intended stakeholders in the health care industry. We are not discounting the value ICD-10 data could have for research, public health surveillance, and other data analysis activities. Based on the concerns we articulate below, however, we question the logic of requiring physicians to adopt a new coding structure at this point in time.

### **ICD-10 is Financially Disastrous for Physicians**

Many practicing physicians regard ICD-10 as a costly, unfunded mandate that will not improve patient care. Indeed, the cost to meet ICD-10 is much larger than originally estimated.

